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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/929,488	08/15/2001	Kimikazu Matsumoto	250901/00	1362

7590 02/27/2004

McGinn & Gibb, PLLC
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Vienna, VA 22182-3817

EXAMINER	
RUDE, TIMOTHY L	
ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 02/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/929,488	MATSUMOTO, KIMIKAZU	
	Examiner	Art Unit	
	Timothy L Rude	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *18-20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims

1. Claims 1, 2, 10, 13, and 18-20 are amended. Please note that claim 14 was listed by Applicant as amended, but it was not amended.

Claim Objections

2. Claim 10 is objected to because of the following informalities: Recitations "a first end of said liquid crystal" and "a first angle relative to a reference point" are unclear. The claimed device comprises a liquid crystal layer comprising molecular alignments wherein an edge of liquid crystal molecules (as opposed to an end) are aligned substantially parallel with the substrate, and an angle is defined with respect to a line (as opposed to a point). Appropriate corrections are required.

Election/Restrictions

3. Previously submitted claims 18-20 are (and were) directed to an invention that is independent or distinct from the invention originally claimed.

Since applicant received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 18-20 remain withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-7 and 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baur et al (Baur) USPAT 5,576,867.

As to claims 1, 2, 10-12, and 14, Baur discloses in Figures 1-8 a number of embodiments of an active matrix type liquid crystal display device, comprising: a thin film transistor (TFT) substrate (col. 5, lines 56-59) having a common wiring and a source/drain wiring formed on a first substrate, said first substrate being provided with an insulating film, 8, Figure 1, covering said common wiring and said source/drain wiring, said insulating film being coated with a first alignment layer, 5, Figure 1; an opposite substrate opposing to said TFT substrate having a second alignment layer, 6, Figure 1, formed on a second substrate; a liquid crystal held between said first alignment layer and said second alignment layer; and a stripe or line-type electrode, 9, Figure 1 (Applicant's common electrode), and a stripe or line-type electrode, 10, Figure 1 (Applicant's pixel electrode) wired in parallel with each other being formed as parts of said common wiring and said source/drain wiring, respectively.

Baur does not explicitly disclose 0.5 to 4.0 degrees.

Baur teaches that an angle made between a direction in which said first alignment layer is subjected to an aligning treatment and a direction in which said second alignment layer is subjected to an aligning treatment is set to a value of β (col. 8, lines 60-65, and col. 13, lines 39-44) is within 15 degree of 0° (overlaps Applicant's 0.5 to 4.0 degrees and 1.5 to 2.0 degrees) to produce a display with low dependence of image contrast on viewing angle (Abstract). Therefore, optimization of the results effective variable β to comprise Applicant's ranges of 0.5 to 4.0 degrees and 1.5 to 2.0 degrees would have been obvious to those having ordinary skill in the art of liquid crystals.

Baur is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to comprise an angle made between a direction in which said first alignment layer is subjected to aligning treatment and a direction in which said second alignment layer is subjected to aligning treatment is set to a value of 0.5 to 4.0 degrees or 1.5 to 2.0 degrees to produce a display with low dependence of image contrast on viewing angle.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Baur with an angle made between a direction in which said first alignment layer is subjected to aligning treatment and a direction in which said second alignment layer is subjected to aligning treatment is set to a value of 0.5 to 4.0 degrees or 1.5 to 2.0 degrees to produce a display with low dependence of image contrast on viewing angle.

As to claims 3, 4, and 13, Baur teaches an embodiment wherein said direction in which said first alignment layer is subjected to said aligning treatment has an angle of β_0-β (col. 8, line 60 through col. 9, line 17) where β_0 is >0° and <20° and β is 0° $\pm$ 15° which yields a maximum range of 5 to 35 degrees (overlaps Applicant's 5 to 45 degrees) (col. 10, Table 2, line D2) with respect to a parallel direction in which said common electrode and said pixel electrode are wired in parallel with each other, wherein an angle made between a direction in which said second alignment layer is subjected to aligning treatment and a direction in which said common electrode and said pixel electrode are wired in parallel with each other is larger than an angle made between said direction in which said first alignment layer is subjected to aligning treatment and a direction in which said common electrode and said pixel electrode are wired in parallel with each other due to twist angle β being 0° $\pm$ 15°.

As to claim 5, Baur discloses a display wherein said TFT substrate and said opposite substrate having said liquid crystal therebetween include a first substrate side polarizer and a second substrate side polarizer on opposite sides opposing to inner sides of said TFT substrate and said opposite substrate facing said liquid crystal, respectively, and in said first substrate side polarizer and said second substrate side polarizer, the absorption axis and transmission axis are mutually orthogonal and Ψ is 0° or 90° (col. 9, lines 25-35, and col. 10, Table 2, line D2) (Applicant's any one of the absorption axis and the transmission axis of said first substrate side polarizer agrees with said direction in which said first alignment layer is subjected to aligning treatment).

As to claim 6, Baur discloses a display wherein a distance between surfaces of said first alignment layer and said second alignment layer opposing to each other is set to a value of 1.0 μm to 10.0 μm (col. 11, lines 44-50) (overlaps Applicant's 1.0 μm to 6.0 μm). Therefore, optimization of the results effective variable to comprise Applicant's range would have been obvious to those having ordinary skill in the art of liquid crystals.

As to claim 7, Baur discloses a display wherein a distance between said common electrode and said pixel electrode wired in parallel with each other is set to a value of 2 μm to 50 μm (col. 11, lines 47-51) (overlaps Applicant's 2 μm to 15 μm). Therefore, optimization of the results effective variable to comprise Applicant's range would have been obvious to those having ordinary skill in the art of liquid crystals.

As to claims 15-17, Baur discloses a display wherein normally black and normally white mode may be established with proper twist and/or polarizer and analyzer angles (col. 5, lines 16-27 and col. 25, lines 50-56). Also, since the contrast ratio is not infinite, some light transmittance must occur in the black display state.

5. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baur in view of Applicant's admitted prior art (APA).

As to claims 8 and 9, Baur does not explicitly disclose a display wherein a gate wiring of a thin film transistor is formed on said first substrate simultaneously with said common wiring and wherein an island disposed above said common wiring and made of a semiconductor film is formed in said insulating film, and said island constitutes an active region of a thin film transistor. However, these are merely common knowledge means of comprising a satisfactory TFT display configuration.

Applicant's admitted prior art (APA) discloses these claimed features in Applicant's Figures 1A and 1B to comprise a satisfactory TFT display configuration.

FIG.1A(PRIOR ART)

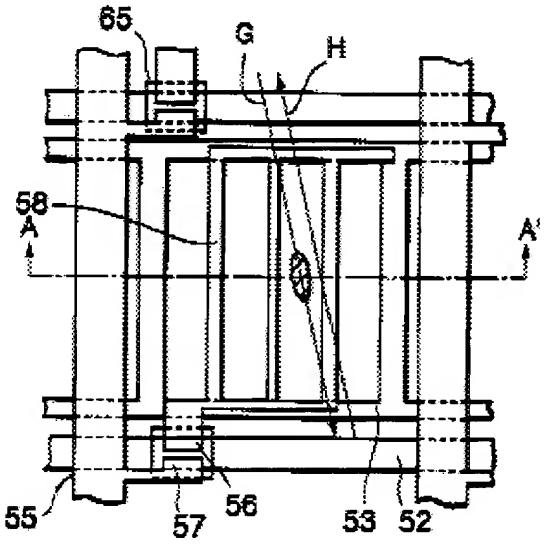
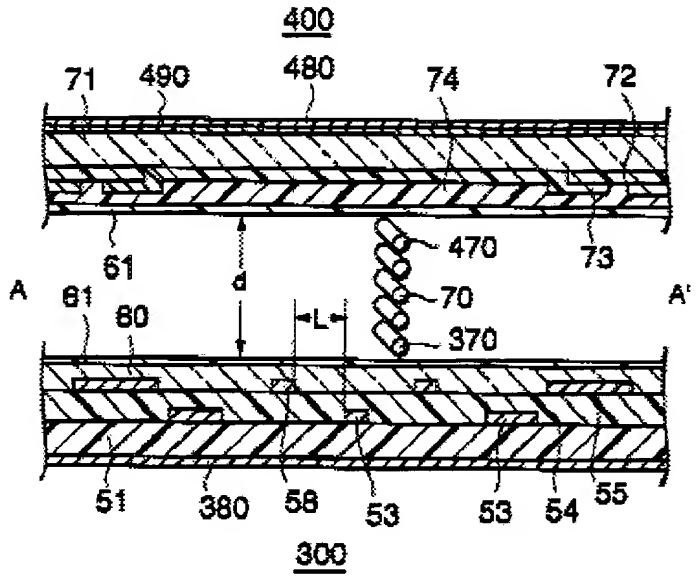


FIG.1B



APA is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a display wherein a gate wiring of a thin film transistor is formed on said first substrate simultaneously with said common wiring and wherein an island disposed above said common wiring and made of a semiconductor film is formed in said insulating film, and said island constitutes an active region of a thin film transistor to comprise a satisfactory TFT display configuration.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Baur with a display wherein a gate wiring of a thin film transistor is formed on said first substrate simultaneously with said common wiring and wherein an island disposed above said common wiring and made of a semiconductor film is formed in said insulating film, and said island constitutes an active region of a thin film transistor of APA to comprise a satisfactory TFT display configuration.

6. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baur in view of Ohta et al (Ohta) USPAT 6,532,053 B2.

As to claims 8 and 9, Baur does not explicitly disclose a display wherein a gate wiring of a thin film transistor is formed on said first substrate simultaneously with said common wiring and wherein an island disposed above said common wiring and made of a semiconductor film is formed in said insulating film, and said island constitutes an active region of a thin film transistor. However, these are merely common knowledge means of comprising a satisfactory TFT display configuration.

Ohta discloses these claimed features in Figures 2 and 3 to comprise a satisfactory TFT display configuration with *inter alia* wide viewing angle (Abstract).

FIG.2

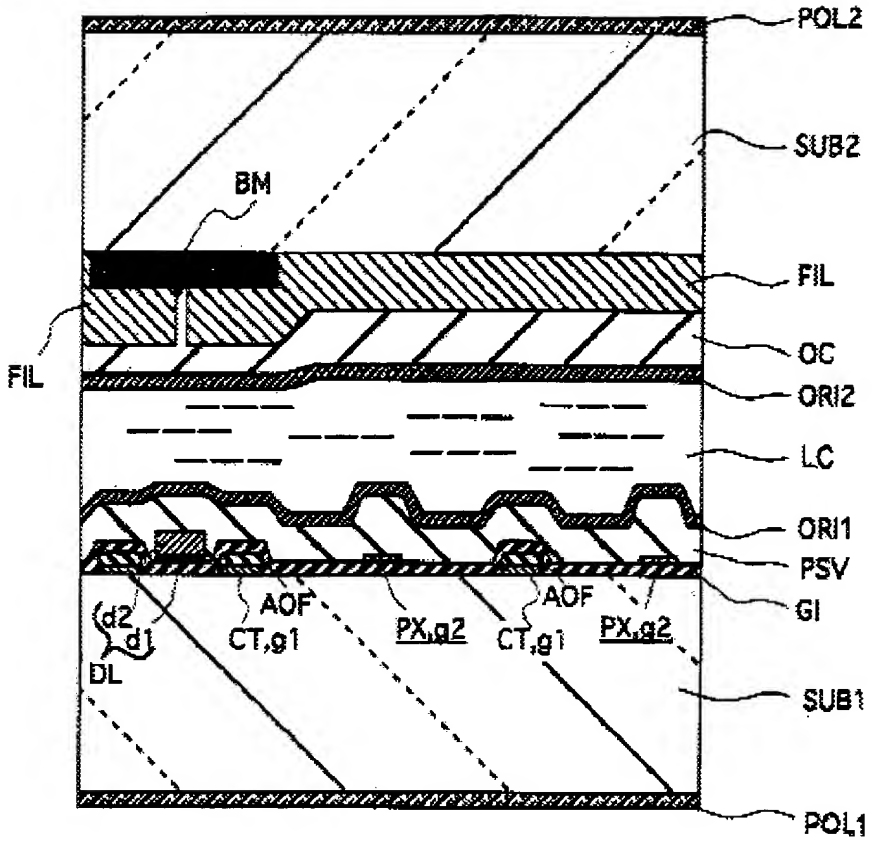
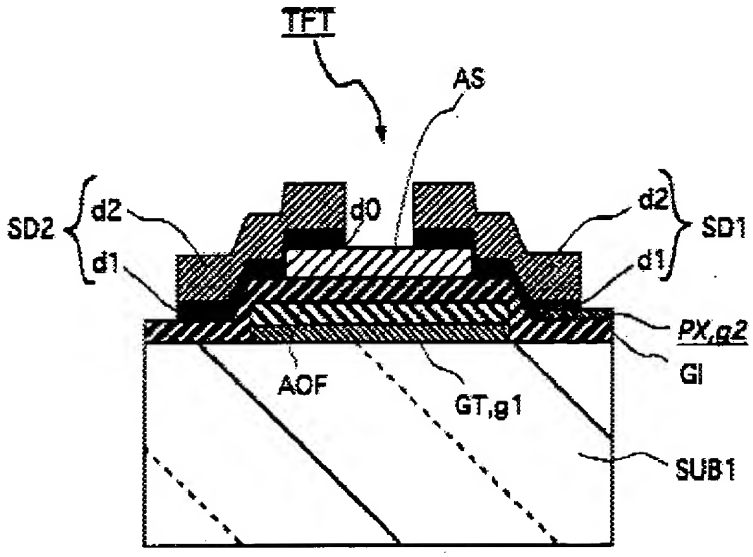

POL2
SUB2
BM
FIL
FIL
OC
ORI2
LC
ORI1
PSV
GI
AOF
AOF
d2
d1
DL
CT,g1
PX,g2
CT,g1
PX,g2
SUB1
POL1

FIG.3



Ohta is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a display wherein a gate wiring of a thin film transistor is formed on said first substrate simultaneously with said common wiring and wherein an island disposed above said common wiring and made of a semiconductor film is formed in said insulating film, and said island constitutes an active region of a thin film transistor to comprise a satisfactory TFT display configuration with wide viewing angle.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Baur with a display wherein a gate wiring of a thin film transistor is formed on said first substrate simultaneously with said common wiring and wherein an island disposed above said common wiring and made of a semiconductor film is formed in said insulating film, and

said island constitutes an active region of a thin film transistor of Ohta to comprise a satisfactory TFT display configuration with wide viewing angle.

7. Claims 1-7 and 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baur in view of Ohta et al (Ohta2) USPAT 6,266,116 B1.

As to claims 1, 2, 10-12, and 14, Baur discloses in Figures 1-8 a number of embodiments of an active matrix type liquid crystal display device, comprising: a thin film transistor (TFT) substrate (col. 5, lines 56-59) having a common wiring and a source/drain wiring formed on a first substrate, said first substrate being provided with an insulating film, 8, Figure 1, covering said common wiring and said source/drain wiring, said insulating film being coated with a first alignment layer, 5, Figure 1; an opposite substrate opposing to said TFT substrate having a second alignment layer, 6, Figure 1, formed on a second substrate; a liquid crystal held between said first alignment layer and said second alignment layer; and a stripe or line-type electrode, 9, Figure 1 (Applicant's common electrode), and a stripe or line-type electrode, 10, Figure 1 (Applicant's pixel electrode) wired in parallel with each other being formed as parts of said common wiring and said source/drain wiring, respectively.

Baur does not explicitly disclose 0.5 to 4.0 degrees.

Ohta2 teaches (first embodiment, col. 4, lines 32-34, col. 18, lines 58-62, and col. 19, lines 33-37) that an angle made between a direction in which said first alignment

layer is subjected to an aligning treatment and a direction in which said second alignment layer is subjected to an aligning treatment is set to a value of β (col. 8, lines 60-65, and col. 13, lines 39-44) is within 5 degree of 0° (overlaps Applicant's 0.5 to 4.0 degrees and 1.5 to 2.0 degrees) to produce a display with low dependence of image contrast on viewing angle in a fixed driving voltage range (reduced voltage with adequate response speed). Therefore, optimization of the results effective variable β to comprise Applicant's ranges of 0.5 to 4.0 degrees and 1.5 to 2.0 degrees would have been obvious to those having ordinary skill in the art of liquid crystals.

Ohta2 is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to comprise an angle made between a direction in which said first alignment layer is subjected to aligning treatment and a direction in which said second alignment layer is subjected to aligning treatment is set to a value of 0.5 to 4.0 degrees or 1.5 to 2.0 degrees to produce a display with low dependence of image contrast on viewing angle in a fixed driving voltage range with reduced voltage with adequate response speed (faster speed allowing lower driving voltage).

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Baur with an angle made between a direction in which said first alignment layer is subjected to aligning treatment and a direction in which said second alignment layer is subjected to aligning treatment is set to a value of 0.5 to 4.0 degrees or 1.5 to 2.0 degrees of Ohta2 to produce a display with low dependence of image contrast on viewing angle in a fixed driving voltage range with reduced voltage with adequate response speed.

As to claims 3, 4, and 13, Baur teaches an embodiment wherein said direction in which said first alignment layer is subjected to said aligning treatment has an angle of β_0-β (col. 8, line 60 through col. 9, line 17) where β_0 is >0° and <20° and β is 0° $\pm$ 15° which yields a maximum range of 5 to 35 degrees (overlaps Applicant's 5 to 45 degrees) (col. 10, Table 2, line D2) with respect to a parallel direction in which said common electrode and said pixel electrode are wired in parallel with each other, wherein an angle made between a direction in which said second alignment layer is subjected to aligning treatment and a direction in which said common electrode and said pixel electrode are wired in parallel with each other is larger than an angle made between said direction in which said first alignment layer is subjected to aligning treatment and a direction in which said common electrode and said pixel electrode are wired in parallel with each other due to twist angle β being 0° $\pm$ 15°.

As to claim 5, Baur discloses a display wherein said TFT substrate and said opposite substrate having said liquid crystal therebetween include a first substrate side polarizer and a second substrate side polarizer on opposite sides opposing to inner sides of said TFT substrate and said opposite substrate facing said liquid crystal, respectively, and in said first substrate side polarizer and said second substrate side polarizer, the absorption axis and transmission axis are mutually orthogonal and Ψ is 0° or 90° (col. 9, lines 25-35, and col. 10, Table 2, line D2) (Applicant's any one of the

absorption axis and the transmission axis of said first substrate side polarizer agrees with said direction in which said first alignment layer is subjected to aligning treatment).

As to claim 6, Baur discloses a display wherein a distance between surfaces of said first alignment layer and said second alignment layer opposing to each other is set to a value of 1.0 μm to 10.0 μm (col. 11, lines 44-50) (overlaps Applicant's 1.0 μm to 6.0 μm). Therefore, optimization of the results effective variable to comprise Applicant's range would have been obvious to those having ordinary skill in the art of liquid crystals.

As to claim 7, Baur discloses a display wherein a distance between said common electrode and said pixel electrode wired in parallel with each other is set to a value of 2 μm to 50 μm (col. 11, lines 47-51) (overlaps Applicant's 2 μm to 15 μm). Therefore, optimization of the results effective variable to comprise Applicant's range would have been obvious to those having ordinary skill in the art of liquid crystals.

As to claims 15-17, Baur discloses a display wherein normally black and normally white mode may be established with proper twist and/or polarizer and analyzer angles (col. 5, lines 16-27 and col. 25, lines 50-56). Also, since the contrast ratio is not infinite, some light transmittance must occur in the black display state.

8. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baur in view of Ohta2 and further in view of Applicant's admitted prior art (APA).

As to claims 8 and 9, Baur in view of Ohta2 disclose the display above.

Baur in view of Ohta2 does not explicitly disclose a display wherein a gate wiring of a thin film transistor is formed on said first substrate simultaneously with said common wiring and wherein an island disposed above said common wiring and made of a semiconductor film is formed in said insulating film, and said island constitutes an active region of a thin film transistor. However, these are merely common knowledge means of comprising a satisfactory TFT display configuration.

Applicant's admitted prior art (APA) discloses these claimed features in Applicant's Figures 1A and 1B to comprise a satisfactory TFT display configuration.

FIG.1A(PRIOR ART)

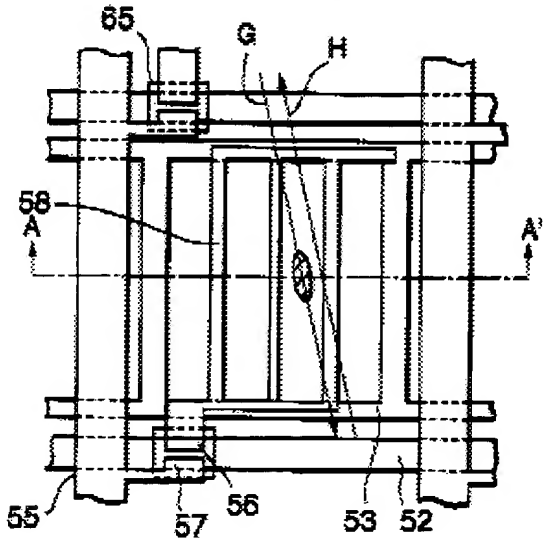
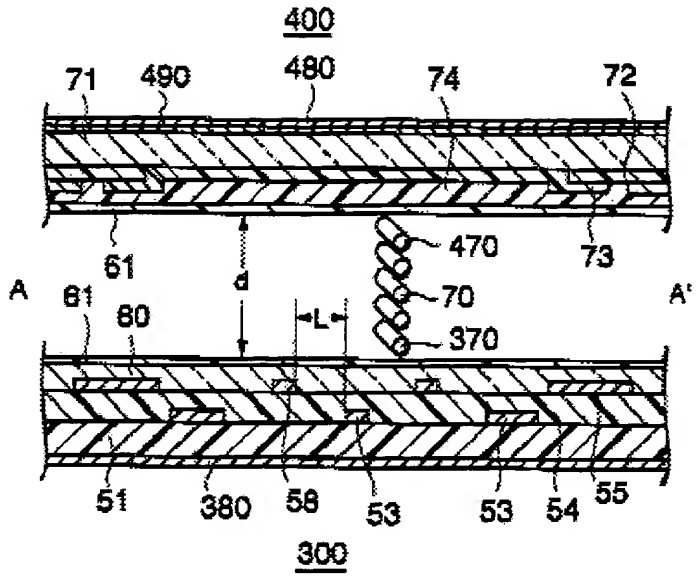


FIG.1B



APA is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a display wherein a gate wiring of a thin film transistor is formed on said first substrate simultaneously with said common wiring and wherein an island disposed above said common wiring and made of a semiconductor film is formed in said insulating film, and said island constitutes an active region of a thin film transistor to comprise a satisfactory TFT display configuration.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Baur in view of Ohta2 with a display wherein a gate wiring of a thin film transistor is formed on said first substrate simultaneously with said common wiring and wherein an island disposed above said common wiring and made of a semiconductor film is formed in said insulating film, and said island constitutes an active region of a thin film transistor of APA to comprise a satisfactory TFT display configuration.

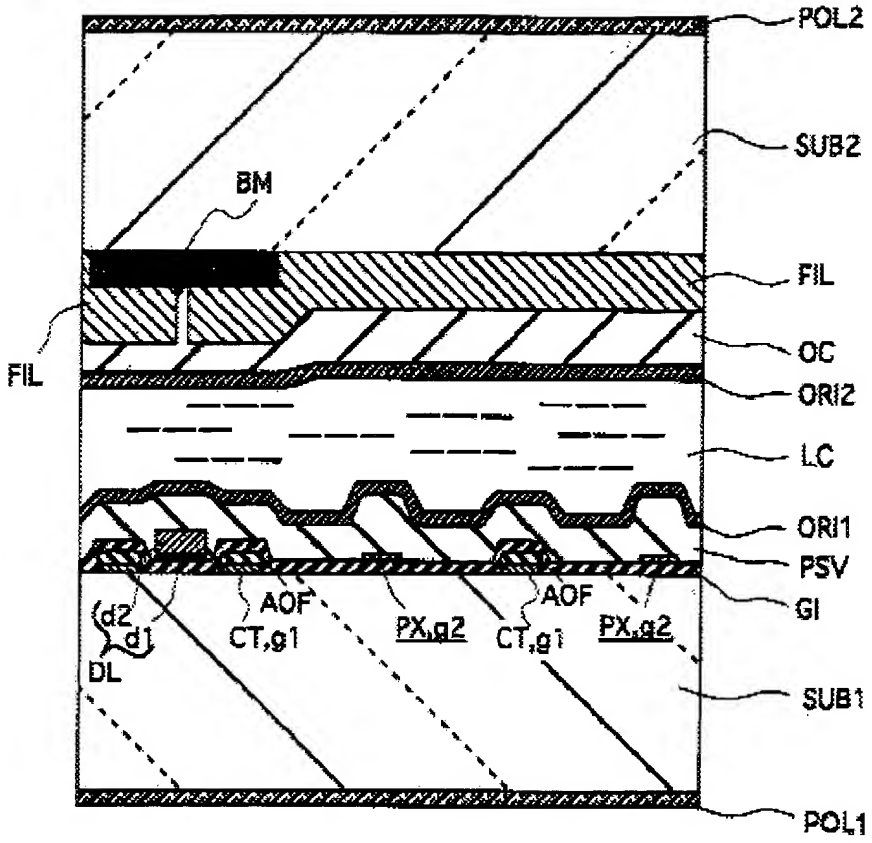
9. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baur in view of Ohta2 in view of Ohta et al (Ohta) USPAT 6,532,053 B2.

As to claims 8 and 9, Baur in view of Ohta2 disclose the display above.

Baur in view of Ohta2 does not explicitly disclose a display wherein a gate wiring of a thin film transistor is formed on said first substrate simultaneously with said common wiring and wherein an island disposed above said common wiring and made of a semiconductor film is formed in said insulating film, and said island constitutes an active region of a thin film transistor. However, these are merely common knowledge means of comprising a satisfactory TFT display configuration.

Ohta discloses these claimed features in Figures 2 and 3 to comprise a satisfactory TFT display configuration with *inter alia* wide viewing angle (Abstract).

FIG.2


POL2
SUB2
BM
FIL
FIL
OC
ORI2
LC
ORI1
PSV
GI
AOF
AOF
d2
d1
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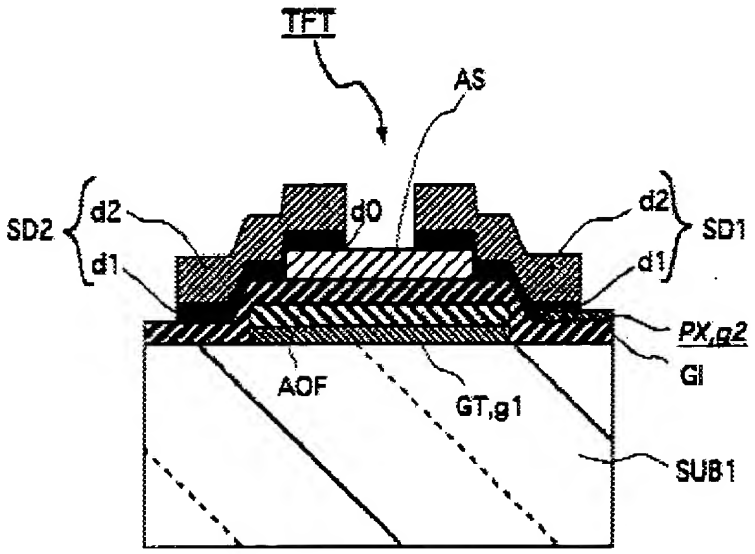
PX,g2
CT,g1
PX,g2
DL
SUB1
POL1

FIG.3



Ohta is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a display wherein a gate wiring of a thin film transistor is formed on said first substrate simultaneously with said common wiring and wherein an island disposed above said common wiring and made of a semiconductor film is formed in said insulating film, and said island constitutes an active region of a thin film transistor to comprise a satisfactory TFT display configuration with wide viewing angle.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Baur in view of Ohta2 with a display wherein a gate wiring of a thin film transistor is formed on said first substrate simultaneously with said common wiring and wherein an island disposed above said common wiring and made of a semiconductor film is formed in said

insulating film, and said island constitutes an active region of a thin film transistor of Ohta to comprise a satisfactory TFT display configuration with wide viewing angle.

Response to Arguments

10. Applicant's arguments filed on 25 November 2003 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are as follows:

(1) Baur does not disclose a structure as claimed to decrease a maximum voltage between the pixel electrode and the common electrode, and to increase a response of switching said liquid crystal while a high contrast ratio is sustained.

(2) Prior art does not teach a structure as claimed to decrease a maximum voltage between the pixel electrode and the common electrode, and to increase a response of switching said liquid crystal while a high contrast ratio is sustained.

(3) Request withdrawl of restriction of method claims.

Examiner's responses to Applicant's ONLY arguments are as follows:

(1) It is respectfully pointed out that Applicant's motivation limitations of "in order to decrease a maximum voltage between the pixel electrode and the common electrode, and to increase a response of switching said liquid crystal while a high contrast ratio is sustained" would be met since the structure of Baur meets the claimed

structural limitations of the device claims, per Applicant's enabling disclosure. Also, although Baur is not required to have the same motivation, please note that Baur discloses his motivation is to produce a display with low dependence of image contrast on viewing angle (Abstract). Examiner maintains rejections in view of Baur are proper because the claimed invention would result despite alternate motivation.

(2) Ohta teaches an angle made between a direction in which said first alignment layer is subjected to aligning treatment and a direction in which said second alignment layer is subjected to aligning treatment is set to a value of 0.5 to 4.0 degrees or 1.5 to 2.0 degrees to produce a display with low dependence of image contrast on viewing angle in a fixed driving voltage range with reduced voltage with adequate response speed (faster speed allowing lower driving voltage) per rejections above. Also, for convenience Applicant may review Hebiguchi et al (Hebiguchi) USPAT 6,137,557 col. 3, lines 14-22, wherein the direct relationship of voltage and response speed is taught.

(3) Arguments are not persuasive. Method of making remains withdrawn.

Please note: References cited but not applied are relevant to the instant Application.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L Rude whose telephone number is (571) 272-2301. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on (703) 305-3492. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tlr

Timothy L Rude
Examiner
Art Unit 2871

ROBERT H. KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800